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THE PLANT DISEASE REPORTER

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The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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LATE BLIGHT IN POTATO CULL PILES IN WISCONSIN

R. H. Larson telegraphed that in a survey of potato cull piles in Central Wisconsin, June 6, sporulating late blight (Phytophthora infestans) lesions were found on sprouts. Weather continued ideal for sporulation. No natural field infection has been found as yet.

Last year Dr. Larson found late blight on sprouts in cull piles on June 7 (PDR 27 (10/11): 220, June 1/15, 1943).

Concerning the possibility of a late-blight outbreak this year, Dr. I. E. Melhus in a mimeographed letter to members of the War Emergency Committee, Upper Mississippi Valley Plant Pathologists, says:

"Every indication at the present tells us to keep a 'weather eye' on the late blight situation.

"Information in hand indicates that the planting of potatoes is lighter than in 1943 and that it is more urgent this year than last that we protect in every way possible the forthcoming crop.

"Our seed was very universally infected because of the wide distribution of the disease last year. The significance of the general distribution of infection in our crop is evident from the losses incurred on the winter crop in the South. Late blight was general on the winter crop from Florida west into the Rio Grande Valley of Texas."

He comments on the publicity given late blight during the winter and early spring, and goes on to say,

"There is less possibility of the growers being caught unaware this year than probably ever before in the history of potato growing in the Middle West.

"In all the States the crop has been planted in a soil with ample moisture and low enough temperature to promote the spread of the pathogen up from the infected tuber to the surface of the soil."

OTHER REPORTS ON LATE BLIGHT

NEW YORK (LONG ISLAND): Late blight has not showed up yet in Suffolk County, nor has it been reported from any fields on the North Fork. (June 2). --G. G. Gyrisko, Weekly News Letter, June 5.

GEORGIA: A follow-up survey was made on potatoes in the Savannah area on May 30. An earlier survey (April 24) revealed scattered infections of late blight in all fields, a few fields showing severe infection. The disease evidently developed very rapidly for 100% of the plants in all fields examined were diseased; from 75 to 100% of the plants were dead, except in one field and here only the upper third of the growth was green. Yields will be extremely low; however, a large part of the loss must be attributed to wet weather during the greater part of the growing season. The growers had apparently pretty much given up hope even before blight became serious.--G. M. Stone, Emergency Plant Disease Prevention Project.

SURVEY FOR POTATO DISEASES IN CALIFORNIA

Horace L. Barnett

During the week ending June 3 a trip was made into the potato growing districts of the Southern San Joaquin Valley, in company with Dr. M. W. Gardner and Dr. J. B. Kendrick. Two of these days were spent in the field with Mr. Marc Lindsey, Farm Advisor of Kern County.

There has been a steady increase in the potato acreage in Kern County in the past several years. The acreage for the 1944 season is approximately 53,000. At this time approximately 1/3 to 1/2 of the potatoes in Kern County had been dug and the harvest was at its peak. On May 31, 811 cars plus 200 carlots by truck were shipped from Kern County. Most of the potatoes in the Edison district, which is somewhat earlier, had already been dug. The yield this season in Kern County is good in spite of the early frost damage. White Rose is the most common variety planted throughout the area.

In Madera County the potatoes were still in the ground, but it was evident that the yield would be lower than in Kern County. The soil is poorer for growing potatoes and apparently much of the seed used in this area was of inferior quality.

The diseases most commonly encountered were: ringrot (Corynebacterium sepedonicum), early blight (Alternaria solani), Rhizoctonia canker (Rhizoctonia solani), blackleg (Erwinia atroseptica)[E.phytophthora], scab (Actinomyces scabies), mosaic (virus; no attempt is made in this report to separate the different mosaic types), and an apparently new trouble of unknown cause.

The proportion of ringrot has apparently been building up in the past few years. The disease showed a decided increase in Kern and Madera Counties this season. It is the belief that not all of this increase can be attributed to the planting of the "war-approved" grade of seed. Perhaps it is due in part to neglect on the part of some growers to insist upon good clean seed. The general impression received was that the certified seed (not the war-approved grade) was in some cases not as free from disease as was seed from carefully selected, reliable sources. One planting in which certified seed was used showed a small percentage (more than a trace) of ringrot and a high percentage of mosaic infection. This raises the question, which is already in the minds of some growers, as to whether seed certification, as it is conducted at present, is the complete solution to the problem of developing or maintaining disease-free seed.

In the vicinities of Bakersfield, Arvin, Lerdo, and Shafter, ringrot was found in approximately 1/3 of the fields examined. The percentage of the infected plants (counts were based upon top symptoms and confirmed by tuber symptoms from representative plants) varied from a trace to approximately 15. Many of the tubers showed only the first signs of the disease, even though the tops showed definite characteristic symptoms. Comparatively few of the infected tubers were in the advanced stages of decay from soft rot organisms. This was probably due to the relatively cool weather in recent weeks. If warmer weather comes soon these infected tubers will be completely decayed in the ground before harvest and the problem of sorting out the ringrot tubers on the graders will be less difficult. Therefore, the growers

are digging their best fields first. This also assures them of making U. S. No. 1 grade and getting their best fields harvested if completion of the harvest is delayed or becomes impossible.

Tubers were examined in several of the packing sheds in Kern County. Those coming through the graders at this time were relatively free from ringrot. Likewise, a few ringrot tubers were found in the dump heaps of culls.

Seven large fields of potatoes were examined in Madera County. Ringrot was found in 5 of these fields. Although no information was available at the time, it appeared that these fields had been planted from 2 distinct lots of seed. Counts of infected plants in 3 of these fields showed the approximate percentages of ringrot plants to be 18, 28, and 60. These growers will no doubt suffer heavy losses due to the use of such poor seed.

The increase in the severity of ringrot this season is sufficient to cause grave concern among the growers over the problem of securing good clean seed. They are also concerned over the possibility that in the future a source of ringrot-free White Rose seed might not be available.

Early blight (Alternaria solani) was prevalent in most potato fields but was causing very little actual damage. No control measures had been attempted.

It is worthy of note that no late blight [Phytophthora infestans] was seen in this area and none has been reported this season, although cool weather prevailed during the spring. There was little rainfall in this area during early spring.

A trace of blackleg (Erwinia atroseptica)[E.phytophthora] was found in in most of the fields but the loss from this disease was very slight.

Rhizoctonia disease (Rhizoctonia solani) was found in most fields although the total damage was slight. Most of the diseased plants showed cankers, varying in the degree of severity, on the underground portions of the stems. A few tubers showing stem-end rot were found in the field. Relatively few tubers showing the presence of sclerotia were seen in the packing sheds or among the culls.

Scab (Actinomyces scabies) infection was moderate to severe in the Shafter area, which is one of the older potato growing districts of Kern County, and light to absent in other districts. At Shafter, one large dump heap (enough to fill several large trucks) was composed almost entirely of scabby tubers. It was impossible to determine what percentage of the total these scabby tubers represented. This heavy infection of scab in this local area is probably due principally to neglect of proper crop rotation.

Potato viruses (particularly the mosaics) were severe in some fields and light in others. A moderate infection of mosaic was seen in a number of fields. One large field in Madera County showed nearly 100% mosaic infection. Many plants were severely stunted and had produced no marketable tubers. In this field a combination of mosaic, ringrot, and poor soil conditions has caused very heavy damage. Plants with the calico virus were present in small numbers in one field near Madera.

Another potato trouble which has not previously been recognized in California was observed in the majority of the fields examined. Some of the symptoms were similar to psyllid yellows, yet no psyllids could

be found. Some growers have confused it with Rhizoctonia disease. Some evidence was found which indicated that it might be tuber transmitted. Possibly it is caused by an undetermined virus.
EMERGENCY PLANT DISEASE PREVENTION PROJECT.

OTHER CURRENT REPORTS ON POTATO DISEASES

RHIZOCTONIA ON POTATOES IN NEW ENGLAND: Rhizoctonia [solani] stem rot was found in 49 of the 52 potato fields examined in Hampshire and Franklin Counties, Massachusetts, May 29-June 1. Fields inspected were located in the "light-soil" areas of Handley, North Hadley, Sunderland, Hatfield, and Whately in the Connecticut River Valley. The average prevalence of infected plants in the 49 fields was 39.6%. Twenty-six fields, 1/2 the number examined, showed prevalence ranging from 20 to 40%; in 4 fields prevalence was about 80%; in 2 about 90%; and in 1 100%. Heaviest infections were associated in general with the more sandy soils and lighter infections with the heavier soil types.

Scattered fields throughout Connecticut were examined June 5-7 for the presence of Rhizoctonia. In the large potato-growing area of Tolland County around Rockville and Ellington "rhizoc" was found in practically every field examined with some fields having a prevalence of 60 to 70% of the plants affected. In one small area around Woodmont the examination of 3 fields revealed an apparent absence of "rhizoc".--Robert C. Cassell, Emergency Plant Disease Prevention Project.

POTATO DISEASES ON LONG ISLAND: In Suffolk County, soft rot and Fusarium rot were quite abundant in many of the potato fields on the North Fork (as a whole, New York State seed appeared to contain more Fusarium than other seed) and the ill effects can be noted by the missing hills throughout many fields.--G. G. Gyrisko, New York State College of Agriculture Weekly News Letter Concerning Insect Pests and Plant Diseases, June 5.

EARLY BLIGHT IN LOUISIANA; What healthy (or partly so) plants remained after the late-blight invasion were heavily infected with early blight (Alternaria solani) in Avoyelles, Pointe Coupee, and St. Landry Parishes.-- Douglas C. Bain, Emergency Plant Disease Prevention Project. May 29-June 3.

STORAGE DISEASES OF TABLE AND SEED POTATOES IN WISCONSIN

Edwin E. Honey

During the period from May 17 to June 3, 1944 inspections of potatoes in storage and tubers on hand about to be planted were made in 10 townships of Langlade County, Wisconsin. Over 125 farms were visited. Special emphasis was given to the occurrence and control of bacterial ringrot of potatoes caused by Corynebacterium sepedonicum

By June 3, approximately 95% of the potatoes were planted in Langlade County and it is probable that all potato planting will be completed by June 10. It is more likely that 90% planted would better represent the State

as a whole.

In general, this season is slightly behind the average year. Periodic rains had prevented or delayed planting on the moister or heavier soils in Langlade County. Many growers were cultivating their first plantings, which were beginning to appear, prior to making their final planting. Some plantings had been delayed because of difficulty or failure to secure commercial fertilizers and there may have been some reduction in potato acreage because of this.

Diseases Observed

Bacterial Ringrot: Table 1 gives a brief summary of 124 farm locations with respect to presence of bacterial ringrot in Langlade County. Of these approximately 30% had ringrot present at time of inspection, commonly in the seed to be planted for the 1944 crop. An additional 30% were known to have had ringrot present in the 1943 crop or prior and an attempt had been made to eradicate it. To what extent this attempt had been successful could not be determined until the 1944 crop has been observed in the field or harvested. In 40% of the cases ringrot was not found or known to be present. In many of those cases ringrot was suspected although not found for one reason or another. It is safe to say that much more than 60% of the potato growers in the 10 townships have had bacterial ringrot in varying degrees in their 1943 potato crop.

Most growers with large acreage are alert to the threat of ring rot and are sufficiently familiar with the symptoms of this disease in the field and storage to detect it, have made a very strong effort to eradicate the disease and are guarding against all possible avenues of introduction.

Many small growers are also aware of its danger and are equally alert to detect, eradicate or prevent its introduction or spread. However, some growers do not recognize the disease, are not aware of or do not appreciate its threat to the potato industry, and do not observe the necessary precautions and techniques to prevent its introduction and spread in their crops. Some growers while realizing the presence of the disease do not appreciate its danger and serenely plant ringrot affected tubers, ignoring elimination of affected stock and disinfection of equipment and thus build up and spread the disease. The disease introduced on one variety is readily spread to other varieties being grown and handled by the same equipment and containers. It is known to have been introduced into most locations by growers using a small amount of inferior seed to fill out a desired acreage. It would have been better to use this small unplanted acreage some other way or leave it idle or else secure clean seed with a known reliable history rather than plant affected or contaminated seed. Growers must be very critical of all seed sources.

The cutting knife is undoubtedly the most important factor in the spread of the disease. Many cases were observed where no attempt at disinfection of the cutting knife was made where bacterial ringrot was known to be present.

Grading, planting and other equipment was found to be another possible source for introduction and spread of bacterial ringrot. It has been a common practice, this year especially, to loan or borrow equipment. One grower of over 100 acres of potatoes stated that he had

loaned his planter to about 10 neighbors. No disinfection was practiced. He still had some acreage to plant and was advised to disinfect before planting the remainder of his crop.

Bruises of any kind occurring from the time of digging until the time of planting the next season afford good avenues of entry for the ringrot bacteria so that care in harvesting, handling, grading and storing seed potatoes, especially, should be exercised.

From this survey it is evident that bacterial ringrot is much more widely spread and severe in Langlade County than in Portage and Waupaca Counties reported on May 6, 1944. Many cases of ringrot could be traced to certain growers with larger acreage, who have contaminated seed and who are disposing of it for seed purposes to smaller growers. This phase of ringrot spread is of great importance.

Ringrot was found in samplings of all varieties examined. In sequence of the greatest number of cases of ringrot encountered by variety, the following varieties were observed to have ringrot in Langlade County: Katahdin, Cobbler, Chippewa, White Rural, Sebago, Triumphs, Russet Rural.

Table 1. Summary of Bacterial Ringrot in Langlade County, Wisconsin, May 1944

Township	Total Number of Locations Included	Percent of Locations: Ringrot found present	Ringrot known to be present in 1943*	Ringrot not seen
Rolling	16	19.0	37.5	43.5
Ackley	21	33.3	28.6	38.1
Antigo	27	30.0	30.0	40.0
Neva	15	40.0	26.7	33.3
Peck	6	66.7	16.7	16.7
Price	17	17.6	53.0	29.4
Polar	3	33.3	0.0	66.7
Wolf River	9	55.6	11.1	33.3
Langlade	7	0.0	14.3	85.7
Norwood	4	0.0	33.3	66.7
Totals & Averages	124	30.0	30.0	40.0

*Reported by growers.

Late Blight: In general late blight appeared to have been quite well controlled in 1943 by spraying in Langlade County. Most growers use wet spray only. A few growers supplement the spray with dust in case a wet soil makes the use of heavy spray rigs too difficult or impossible. Late blight was found in traces to slight amounts. Relatively fewer cases of late blight and less severe infection was observed in Langlade than previously in Portage and Waupaca Counties. This is probably because more careful spraying is consistently followed by a larger percentage of growers in Langlade County. Where affected seed pieces are planted a source of inoculum originates within the field favoring early development of late blight.

As this report is being prepared Dr. R. H. Larson announces obtaining fruiting of the late blight pathogen, *Phytophthora infestans*, on stalks of potatoes from cull piles in Central Wisconsin collected June 6. This is an earlier date than that reported for 1943. Cloudy, moist,

below normal temperature weather with mist and rain, favoring the sporulation and spread of the late blight organism, has obtained over much of the State. Because of the large amount of inoculum in seed planted there is danger that under these environmental conditions the late blight pathogen may develop, sporulate, and spread rapidly. Notices of this danger have been wired to County Agents and others.

Scab: [Actinomyces scabies] Scab appeared to be much less severe than was found previously in Waupaca and Portage Counties. It was found in from only a trace to very moderate amounts. Only one case of severe scab was encountered.

It is probable that the moister soils and rainfall during the 1943 season were largely responsible for less scab in Langlade Co.

Early Blight: Early blight [Alternaria solani] infection on tubers was quite commonly encountered in certain townships of Langlade County, especially Polar, Price and Neva. Tuber infection was found from a trace to very severe, especially on the Cobbler variety. Why early blight tuber lesions were more prevalent here than in Waupaca and Portage Counties was not determined. Possibly planting potatoes in successive years on the same land may have built up infection on tubers in some cases.

Rhizoctonia: Sclerotia of Rhizoctonia [solani] were observed commonly in from only a trace to slight amount of tubers. No severe amounts were observed on any one variety.

Blackleg: Only a few cases of blackleg [Erwinia phytophthora] were observed. Blackleg on some Sebagoes was followed by storage rots.

Storage Rots: Some storage rots resulting in blackening and softening of the potato tissue were observed. These entered through late blight, scab, or blackleg lesions or through mechanical cuts or bruises. Only traces to moderate amounts were observed.

Spindle Tuber: A very small amount of spindle tuber [virus] was observed in a few locations, chiefly in Chippewa, Cobblers, and Triumphs. One grower stated he had had so much spindle tuber in Chippewa that he had disposed of this stock and obtained new seed for 1944.

Hair Sprout: Traces of hair sprout [nonparasitic] were observed in Chippewa, White Rural, and Triumph. The greatest amount was observed in one lot of Triumph where approximately 2% was found present.

Stem End Discoloration from Fusarium was observed as only a trace in a few lots, chiefly Russet Rurals, examined.

Freezing: Less loss from freezing was observed in Langlade than in Waupaca and Portage Counties. This may have been because such tubers had been disposed of by the time of inspection. A few frozen potatoes were found in several small storage cellars under windows against moist concrete walls or by doors.

Mahogany Browning: Mahogany browning from long-time exposure to low temperatures (not freezing) was observed especially on Chippewa in small amount in several storages. It was observed in both table stock and seed stock. There did not appear to be as great economic loss from this cause in Langlade as in Waupaca and Portage Counties. Since the mahogany browning was not too severe, seed potatoes showing it were being planted.

Internal Necrosis: Very little internal necrosis caused by physiological conditions obtaining during growth, was encountered in Langlade

County. One case of internal necrosis originating in Shawano County was observed. It is a trouble frequently associated with light sandy soils.

Black heart: Very little black heart was encountered. Two cases were observed in the town of Neva where storage was in damp small house cellars. Black heart was found in both cases under windows against damp concrete walls. Whether the moisture as well as the amount of potatoes stored on top of these was partly responsible for excluding oxygen could not be determined.

Hollow heart: Much less hollow heart was encountered in Langlade than in Waupaca and Portage Counties. This may be in part because certain varieties as the Sequoia were not so commonly encountered here. Hollow heart was observed chiefly in Katahdin and Chippewa.

Mechanical Injury: Mechanical injury from digging cuts and bruising from other equipment and handling was commonly observed in ordinary amount in most locations. Such injuries are possible avenues for bacterial ringrot infection. Cases of considerable mechanical injury in Triumph, Sebago, Cobbler and Chippewa were associated with greater amounts of storage rots.

Potatoes were to be accepted in gondolas for Government purchase for alcohol and mixed feeds through June 6 in Langlade and Portage Counties. Many such potatoes have been shipped from these counties during the last three weeks.

EMERGENCY PLANT DISEASE PREVENTION PROJECT.

REPORTS ON DISEASES OF TOMATO, EGGPLANT, AND PEPPER

COLLAR ROT OF TOMATO IN MARYLAND: This year collar rot (Alternaria solani) was more severe on tomato plants shipped into Maryland from the South than it has been for the past several seasons. The plants appeared to be in good condition at the time of their arrival, but within the next few days the collar rot lesions developed. The stand was so poor as a result of the disease that some fields were disked up while in many other fields it was necessary to replant as many as 40 to 50% of the plants. This has resulted in an uneven stand of plants in most fields in the tomato-growing area of the State.--Carroll E. Cox, Maryland Agricultural Experiment Station, College Park, Maryland.

DISEASES ON TOMATO AND RELATED CROPS IN LOUISIANA: The large Tomato section below New Orleans in St. Bernard and Plaquemines Parishes looks quite well in spite of the general and sometimes severe leaf spotting due to Alternaria solani. In one field of about half an acre from 10 to 12% of the plants were affected by wilt (Fusarium [bulbigenum f.] lycopersici). A trace of blossom-end rot (physiogenic) was noted in another field.

A considerable acreage of Eggplants is also grown in the 2 parishes below New Orleans. In some fields, harvest has already started. Thus far, the plants are unusually free from disease. Only a trace of blight (Phomopsis vexans) was found on the leaves, and another leaf spot (Alternaria sp.) was noted on a few plants.

In St. James and St. John Parishes large acreages are planted to Peppers. A trace of southern blight (Sclerotium rolfsii) and an un-

determined wilt, was noted. At Grand Point, leaf spot (Cercospora capsici) is doing considerable damage in one field of about 4 acres.--Douglas C. Bain, Emergency Plant Disease Prevention Project.

TOMATO DISEASES IN TEXAS: Tomatoes in the Yoakum-Hallettsville area (Lavaca and DeWitt Counties) were not as good quality as in previous years. In many fields the set of fruits was light, and fruit blemishes from wind and sand were common, and in some cases fruits were off-type as to shape. Culls in packing sheds showed catfaces, blossom-end rot, rubbing scars, bacterial canker (Phytomonas michiganensis) [Corynebacterium michiganense] , bacterial speck (Bacterium punctulans) [Pseudomonas tomato], and bacterial spot (Phytomonas [Xanthomonas] vesicatoria).

In one field, a high percentage of the plants were affected by bacterial canker and leaves and fruits were marked with bacterial canker, and spots due to bacterial speck. Yield in this field was probably reduced by 50%. The grower had not treated his seed, which was purchased in bulk through a local dealer.

Southern blight (Sclerotium rolfsii) was found, but had not been serious. It was observed on plants and on fruits in contact with the soil.

Mosaic (virus) was common in many fields, and in several instances affected 100% of the plants.

Leaf roll (undetermined) was seen occasionally.

Early blight (Alternaria solani) was found generally, but not in serious proportions.

Fusarium wilt (Fusarium bulbigenum var. lycopersici) [F. oxysporum f. lycopersici] was observed occasionally in fields in this area.

Tomatoes in the El Paso Valley (El Paso County) were free from diseases except curly top (virus) which was encountered occasionally.--George A. Altstatt, Emergency Plant Disease Prevention Project. May 20-May 31.

TOMATO VIRUS DISEASES IN CALIFORNIA: One small field of tomatoes (part of them staked) near Madera showed an early infection of curly top (Virus). Counts of infected plants in this field varied from 4 to 12%. Another field nearby showed scattered plants with curly top and several plants with mosaic (virus).

Three fields of early tomatoes east of Bakersfield showed a heavier infection with curly top. The average counts of infected plants in these fields were 25%, 25%, and 12%. Another field in the Madison district showed approximately 5% infection. Mosaic was more common in the latter field.--H. L. Barnett, Emergency Plant Disease Prevention Project, week ending June 3.

REPORTS ON DISEASES OF OTHER VEGETABLE CROPS

SOUTHERN BLIGHT ON GREEN BEANS IN GEORGIA: Several fields of green beans were examined in the Savannah area. Southern blight (Sclerotium rolfsii) was severe in most fields; in one field 10% of the plants were dead. Picking had started in only one field.--G. M. Stone, Emergency Plant Disease Prevention Project. May 30.

YELLOWS ON CABBAGE IN TEXAS: A trace of cabbage yellows (Fusarium

[oxysporum f.] conglutinans) was seen in one planting in El Paso County.--George E. Altstatt, Emergency Plant Disease Prevention Project. May 20-31

DISEASES ON CANTALOUP IN TEXAS: A trace of downy mildew (Pseudoperonospora cubensis) was evident in the Lower Rio Grande Valley. Mosaic (virus) was observed in the Lower Valley and in the Laredo area. Root rot (Phymatotrichum omnivorum) was doing slight damage in one field at Laredo.--George E. Altstatt, Emergency Plant Disease Prevention Project. May 20-31.

SOUTHERN BLIGHT ON CARROTS IN TEXAS: A large field of carrots near Taft in San Patricio County showed extensive damage by southern blight (Sclerotium rolfsii). At least 25% of the carrots were completely killed, and probably another 25% were infected.--George E. Altstatt, Emergency Plant Disease Prevention Project. May 20-31.

SMUT AND DAMPING-OFF OF SEEDLING ONIONS IN MASSACHUSETTS: Twenty-six fields of seedling onions were examined in Hampshire and Franklin Counties, in Hadley, North Hadley, Sunderland, Hatfield, and Whately. Smut (Urocystis cepulae) was found in 16 of the 26 fields. Eight of the 16 fields had less than 1% prevalence of smut, and only 6 fields had more than 5%. Average prevalence in the 16 affected fields was 6.8% and in the most seriously affected field 45% of the plants were smutted.

Damping-off (Fusarium sp.) was found in noticeable proportions in 2 of the 26 fields. In one field it had accounted for a loss of about 15% of the plants; in the other for about 25% loss.--Robert C. Cassell, Emergency Plant Disease Prevention Project. May 29-June 1.

TIPBURN OF SET ONIONS IN CONNECTICUT: Tipburn (Nonparasitic) of set onions exists in serious proportions throughout Connecticut this year. It is present in commercial plantings as well as in Victory gardens. The tipburn condition, as distinguished from onion blast, is apparently due this year to a lack of sufficient moisture within the limited root range of the plants, accompanied by drying winds. If sufficient and well-distributed rains occur during the next few weeks losses probably will not be very great. However, if dry weather continues there will undoubtedly be a serious loss to the onion industry of the State.--Robert C. Cassell. Emergency Plant Disease Prevention Project. June 5-7.

ONION DISEASES IN TEXAS: Cull onions in packing sheds at Sinton and Taft (San Patricio County) showed some neck rot due to Bacillus carotovorus [Erwinia carotovora] and Diplodia sp. Onions for seed production still in the ground at Ysleta (El Paso County) and at Pecos (Reeves County) showed Fusarium bulb rot and pink root.--George E. Altstatt, Emergency Plant Disease Prevention Project. May 20 - 31.

SURVEY FOR PEA DISEASES IN COLORADO: During the week ending June 3, a survey for pea diseases was made in Larimer and Boulder Counties in company with J. L. Forsberg, Assistant Pathologist of the Colorado Experiment Station. Stands were generally good. Most of the seeds had been treated with Spergon. A few plants were found affected by a root rot caused by Rhizoctonia solani.--E. W. Bodine, Emergency Plant Disease Prevention Project.

REPORTS ON DISEASES OF COTTON, TOBACCO, AND SUGAR BEETS

SORE-SHIN ON COTTON IN MISSISSIPPI: Cotton examined in the 8 southernmost counties during the week of May 22-27 appeared to be in good condition except for a certain amount of sore-shin (Corticium sp.).--Douglas C. Bain, Emergency Plant Disease Prevention Project.

COTTON DISEASES IN LOUISIANA: Angular leaf spot (Bacterium [Xanthomonas] malvacearum) was found in small amounts in fields in Pointe Coupee Parish. Leaf spot (Phyllosticta gossypina) was found to be abundant in one field near Bunkie in Avoyelles Parish). A considerable amount of sore-shin (Corticium vagum)[Pellicularia filamentosa] was found in St. Landry Parish and the irregular stands in that area are probably due to this disease.--Douglas C. Bain, Emergency Plant Disease Prevention Project. May 29-June3.

CONDITION OF COTTON IN TEXAS: In general, cotton is making good progress in most areas. In the El Paso Valley (El Paso and Hudspeth Counties) a good stand was indicated, and plants observed were free of diseases. No root rot, Verticillium wilt, or damping-off was observed in this irrigated section. This was also true for the Pecos area (Reeves County). Root rot (Phymatotrichum omnivorum) was observed on cotton in Willacy County, in a relatively new cultivated area.--George L. Altstatt, Emergency Plant Disease Prevention Project. May 20-31.

CONDITION OF TOBACCO IN LOUISIANA: A considerable acreage of Perique tobacco is grown at Grand Point in St. James Parish. This area has been visited from time to time and the tobacco has been closely watched. There is a beautiful crop this year and the plants are remarkably free from disease. Cutting is due to start in 4 to 6 weeks. Mosaic (virus) was found in 2 fields of about 2 acres each. Only infected suckers were found on one plant in one of the fields, and in the other field one entire plant was diseased and only the suckers of another. Thus, in the areas surveyed, only 3 infected plants were found. No other diseases were present.--Douglas C. Bain, Emergency Plant Disease Prevention Project. May 29 - June 3.

DOWNY MILDEW ON SUGAR BEETS IN OREGON: Two plantings of sugar beets for the seed crop were noted in Linn County, April 28-29. Near Crabtree, downy mildew (Peronospora schachtii) was apparent on the inner leaves of from 7 to 10% of the plants as one walked down the rows. Near Albany, only traces of severely affected plants were evident at this date.--Lytton W. Boyle, Emergency Plant Disease Prevention Project.

SMALL GRAIN DISEASE SURVEY IN KENTUCKY

L. M. Josephson and R. A. Hyre

At various times from May 10 to June 2 surveys have been made of small grain diseases in Kentucky. The surveys were made in the central part of the state, from Somerset in Pulaski County, west to Hopkinsville, north to

Henderson, east to Owensboro, south to Beaver Dam then into Lexington and surrounding areas.

Barley.-

Over 420 acres of barley in 57 fields were observed. Bearded barley predominated with only an occasional field of hooded barley seen. Kentucky No. 1 barley was most popular. Also grown were Missouri Early Beardless, a small amount of Kentucky No. 2, and unidentified varieties. Some barley was already harvested at the time of termination of the survey.

Covered smut (Ustilago hordei)[U. jensenii] occurred in 84% of the fields. The average for all fields was 4.5%, with a range of 0 to 27.5%. Loose smut (Ustilago nuda) occurred in 74% of the fields. The average was 1.8% with a range of 0 to 15%. Intermediate loose smut (Ustilago medians or U. nigra) occurred in less than 20% of the fields and never more than 1% in any field. Stripe (Helminthosporium gramineum) occurred in 40% of the fields. The average for all fields was 1.9%, the range was 0 to possibly 38%. Powdery mildew (Erysiphe graminis var. hordei) was present in noticeable quantities in 44% of the fields; it was recorded as being severe in one-fourth of these fields. A small amount of leaf rust (Puccinia anomala) was present in about 12% of the fields and a trace of stem rust (P. graminis) was found. Net blotch (Helminthosporium teres) was variable. Some fields apparently were free from this disease but it was severe in about 10% of the fields. Spot blotch (H. sativum) occurred less frequently but occasionally was severe. Traces of Septoria leaf spot and of scab [Gibberella zeae] were present. Cheat was widespread.

Oats.-

Very little oats were seen. In 45 acres observed about 1% smut occurred. This was predominantly covered smut (Ustilago levis) [U. kolleri] with a slight amount of loose smut (U. avenae). A slight amount of stem rust and of crown rust (Puccinia coronata) was observed.

Wheat.-

Six hundred and fifty acres of wheat in 65 fields were surveyed. By the end of the survey the wheat was in the soft dough stage. Loose smut (Ustilago tritici) was found in 94% of the fields. The average was 0.9%, the range was 0 to 5.3%. Leaf rust (Puccinia triticina)[P.rubigo-vera var. tritici] was noted in 75% of the fields. It was severe in 8% of the fields but usually occurred from a trace to light amounts. Septoria leaf spots were noted in about 20% of the fields but usually in light amounts. Small amounts of Helminthosporium leaf spot, scab, and stem rust were noted. KENTUCKY AGRICULTURAL EXPERIMENT STATION AND U. S. EMERGENCY PLANT DISEASE PREVENTION PROJECT.

SURVEY FOR DISEASES OF SMALL GRAINS IN MISSOURI

T. W. Bretz

A survey for the incidence of diseases on the fall planted small grains was made during the week ending June 3 in a number of counties in central Missouri, namely Boone, Cole, Moniteau, Cooper, Callaway, and

Audrain Counties. Wheat is the principal winter grain grown in this area. A relatively small acreage is planted to winter rye and barley, thereby definitely restricting an extensive survey of these crops.

WHEAT - This crop has developed very rapidly in the past 2 weeks and practically all fields in the area surveyed were in the boot to heading stage. The incidence of leaf rust has increased considerably during the preceeding 10 days. Infection was observed in all the fields examined. The prevalence varied greatly from field to field, ranging from a trace (i. e., one to few pustules on an occasional leaf) to 100% (All leaves showing one or more pustules). The intensity of infection was likewise variable, ranging from a single pustule per leaf to as many as 50 to 100 per leaf (10% on USDA scale).

Speckled leaf blotch (Septoria tritici) was prevalent in every field examined. Its development seems to have been halted (or at least greatly retarded), probably by the prevailing high temperatures, and no new lesions were observed on the recently developed foliage. Loose smut was observed in 90% of the fields. The extent of infection varied from a trace to as much as 15%, averaging approximately 4% for all fields. The first trace of stem rust infection this season was observed in 2 locations in Callaway County. Only an occasional pustule could be found after a rather extensive search of the respective fields, however. One field in Cole County and 2 fields in Callaway County showed symptoms very suggestive of mosaic (virus) infection. The symptoms, however, were not distinct enough to permit a positive diagnosis.

RYE - Leaf rust (P. dispersa) [P. rubigo-vera var. secalis] was observed in each of the few fields of rye observed. The extent of rust infection was light; from one to few pustules on approximately 50% of the leaves. Two of the fields examined showed anthracnose (Colletotrichum cereale) [C. graminicolum] to be generally prevalent, but little damage appeared to result from the infections. Scab (Gibberella saubinetii) [G. zeae] was observed affecting a few spikelets in approximately 1% of the heads. A trace of ergot (Claviceps purpurea) was found in one field.

BARLEY - Only one field of barley, this in the soft dough stage of development, was observed in the area surveyed. A trace of stem rust and a trace of leaf rust were noted. Approximately 1% covered smut and 0.5% to 1% loose smut (U. nuda or U. nigra) infection was observed. An occasional head showed a few scabby spikelets. In the variety test plots of the Field Crops Department of the University of Missouri, located a few miles south of Columbia, light to heavy and very vigorous powdery mildew (Erysiphe graminis) infection was observed on the susceptible selections. Likewise light to heavy scald infection (Rhynchosporium secalis) was noted on the various susceptible varieties.

Brown spot (nonparasitic) was prevalent on certain varieties, the degree of spotting varying to a marked degree in the various selections. Varying amount of loose and covered smut and light scab infection were also observed.

EMERGENCY PLANT DISEASE PREVENTION PROJECT.

LEAF SPOT ON OATS AND OTHER DISEASES ON SMALL GRAINS IN IOWA

Edgar F. Vestal

In company with Dr. G. C. Kent, Botany and Plant Pathology Section, Iowa State College, and for portions of the time being joined by Dr. H. C. Murphy, Division of Cereal Crops and Diseases, United States Department of Agriculture and Dr. Charles Bower, Soils Section, Iowa State College, a survey for leaf spot of oats was made in Boone, Hamilton, Wright, Hancock, Cerro Gordo, Franklin, Hardin and Story Counties during the week ending June 3.

Except for low spots where water had stood the oats were in good condition and appeared well on the way to recovery from the beating they had received from the heavy rains of the middle of May.

A leaf blotch caused by Helminthosporium avenae Eidam was found in all thefields. The percentage varied from a trace to as much as 10. Little real injury appeared, however, at this time. The surveyed fields have been listed in the following table according to the amount of leaf spotting.

Percentage of Leaf Spot in Thirty-Three Surveyed Fields of Oats in Iowa. May 26-27, 1944.

Number of fields with designated amount											
Trace	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	Total number of fields
19	7	1	3	0	1	1	0	0	0	1	33

Halo blight (Phytomonas [Pseudomonas] coronafaciens) was found present in all of the fields. It varied from a trace to as much as 95% of the leaves infected. There appeared to be little relationship between its incidence and the soil type although there seemed to be more in the low ground of some fields. In other fields, the higher ground appeared to contain the higher percentage of infected plants. The surveyed farms have been listed in the following table according to the amount of infection.

Halo Blight on Oats in Thirty-Three Surveyed Fields in Iowa May 26-27, 1944

Number of fields with designated amount									
Trace	5%	10%	20%	30%	50%	75%	85%	95%	Total number of fields
6	11	1	7	2	0	2	3	1	33

Earlier in the season speckled-leaf blotch of wheat was found in the nurseries doing some damage to the early foliage. However, at this time it has subsided and very little is seen.

No crown rust was observed on oats during the survey but while looking

over the varietal plots on the Agronomy Farm at Ames, in company with Dr. H. C. Murphy and Dr. Jack Wallin, Dr. Murphy found crown rust on Urban oats.

Leaf rust was found just beginning on the wheat plots at Kanawha and at Ames it was present to the extent of as much as 10% on the susceptible varieties.

No stem rust was found at Kanawha but while in company with Dr. H. C. Murphy, Dr. Jack Wallin and Mr. A. H. Hagge, Barberry Eradication, U. S. D. A., it was found in the varietal plots at Ames.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

DISEASES OBSERVED ON SMALL GRAINS IN MINNESOTA AND SOUTH DAKOTA

Ian W. Tervet

A survey was made during the week ending June 4 in central and eastern South Dakota and western and south-central Minnesota. In South Dakota, the writer was accompanied by W. F. Buchholtz, Plant Pathologist of the South Dakota Agricultural Experiment Station, and by R. O. Bridgford of the Morris Experiment Station of the University of Minnesota in the territory adjacent to Morris, Minnesota.

Resulting from the heavy rains during April and much of May, there has been a marked reduction in the acreage of wheat and barley in parts of eastern South Dakota and western, central, and southern Minnesota. In some counties in western Minnesota, very few wheat and barley fields were seen and oats, which constitute the major part of spring grain planting this year, were not planted as heavily as anticipated. Much of the land that normally would have been planted to small grains has been planted to corn. Many farmers faced with prospect of still further delay in planting because of continuing rains are trying to obtain early strains of corn. Soybeans, millet, and occasionally buckwheat may be planted on some land still too wet for corn. In Lyon, Yellow Medicine, and parts of other western counties of Minnesota, many farmers have been able to plant only a very limited amount of small grain and their corn planting is far behind schedule. One farmer in Yellow Medicine County had planted by June 1, 4 acres of oats, 6 acres of flax (which he was intending to plow up and replant to corn because of a poor stand of flax and heavy weed competition), and about 60 acres of corn. He farmed about 300 acres and about 1/3 of that land had water standing in the fields on June 1 with little prospect of the land drying sufficiently soon to enable him to plant corn. Weeds are even more abundant than in 1943. Much of the flax will suffer from weed competition and the yield of flax probably will be low partly because of weeds and partly from the relatively poor stands resulting from seedling blight and poor seedbed preparation.

Wheat.--

Root and crown rot (Helminthosporium spp. and Gibberella saubinetii [G. zeae]). In South Dakota, less root rot was found in the central part of the State than in the southeast section. Most fields had less than 5% of the plants infected, some fields having only an occasional plant with mesocotyl and coleoptile discoloration. However, a few fields contained

from 25 to 75% of the plants infected. About 20 miles east of Pierre in a relatively dry section of the State, 25% infected plants were seen, just east of Highmore 50% infection, and near Huron a third field with 50% infected plants. Other fields in the same area had few plants infected, while west of Pierre no root rot was seen in the few fields examined.

In western Minnesota, wheat fields were seen infrequently, and the percentage of plants infected with root rot ranged from a trace to 75, the majority of the fields having less than 5% infected plants.

Leaf rust. A trace of leaf rust was seen in 3 fields of spring wheat near Montevideo and Granite Falls, Minnesota on May 31 and near New Ulm, Minnesota on June 2. No leaf rust was seen on winter or spring wheat in South Dakota or on winter wheat between St. Peter and Minneapolis, Minnesota.

Barley.--

Root and crown rot (Helminthosporium and Gibberella). The distribution and severity of root and crown rot on barley in South Dakota and western Minnesota were similar to infection on wheat. One field near Madison in western Minnesota was found to have 90% of the plants infected, and the farmer stated that the seed used had not been treated. Other fields in the vicinity had few infected plants, 5% infection being the maximum seen.

Oats.--

By far the most conspicuous and damaging disease on oats in much of South Dakota and Minnesota is halo blight (Phytomonas [Pseudomonas] coronafaciens). Oats in western Minnesota (Lac qui Parle, Big Stone, Stevens, and Swift Counties) were so heavily infected that the fields appeared scorched, the majority of the older leaves being dead from the tip to halfway or more down the blade. However, from Montevideo south to Tracy in western Minnesota and east to Sleepy Eye, no oat field was seen with enough halo blight to destroy the leaves, from Sleepy Eye northeast to Minneapolis occasional fields were heavily infected. The earlier-planted oats were most severely injured, but some late plantings had a high infection rating even though destruction of leaf tissue had not progressed so far as in the earlier seedings. At the Morris Experiment Station of the University of Minnesota, great variations in the susceptibility of different oat varieties were observed. While it was not possible to obtain readings on varieties then, it appeared that some of the recently developed oats (Victoria x Richland) were very susceptible. It is hoped that in the next report a summary of the reaction of oat varieties to halo blight will be available.

Helminthosporium leaf spot (H.avenae) was widely distributed but of slight importance.

Flax.--

Seedling blight (Probably Colletotrichum linicolum and Fusarium spp.). In an earlier report (May 21), mention was made of the failure to obtain a satisfactory stand of the flax variety, Crystal. This variety was released to a limited number of farmers in Minnesota in 1944. During the past week, several of the farmers who had received supplies of Crystal flax from the Morris Experiment Station of the University of Minnesota were visited and inspections made of the fields of Crystal. All of the

seed used in the fields examined had been treated with New Improved Ceresan prior to distribution from the Morris station. In every field examined, stands were below normal, in some cases being so poor that farmers were going to plow up the flax. Dying plants were not very common in the fields, between 1 and 5% seedling blight being evident. This number of blighted plants was similar to that found in some fields of other flax varieties, Koto, Biwing, and Bison, but in no case did these varieties have such poor stands.

The cause of the failure of Crystal to give good stands in 1944 is not known definitely, although pre-emergence damping-off of the seedlings is probably responsible. This variety has been one of the highest yielding flaxes in tests at the experiment stations of the University of Minnesota in the past few years. It is possible that the seed produced at the Morris station in 1943 was heavily infected with pathogenic fungi but other flax varieties grown at that station in 1943 have given good stands in 1944. Seed grown at the Crookston station in 1943 was also distributed to farmers and a survey of fields from Crookston seed will be made soon.

Flax rust (Melampsora lini). A very few pustules of flax rust were seen on May 31 in fields near Madison, in Lac qui Parle County, but not elsewhere in western or central Minnesota.

EMERGENCY PLANT DISEASE PREVENTION PROJECT.

CEREAL DISEASE SURVEY IN KANSAS AND NEBRASKA

Stuart M. Pady

In a 4-day trip from May 30 to June 2 through 25 counties of Eastern, Southeastern, South-central, Southwestern and Central Kansas, cereal diseases were observed. Wheat has headed in all of these counties, winter barley is practically mature, spring barley is mostly in the boot, and Oats are heading.

Wheat.--

The most significant development is the appearance of stem rust in 24 out of 59 fields in 17 of the counties. The amount of stem rust in any one field is very small with scattered primary infections for the most part. In a few fields secondary infections were found. The eastern and western counties appeared to have somewhat less than the central counties, none being found west of Pratt County.

Leaf rust is widely distributed, some being found in every field examined. The amount of leaf rust in most counties is small, ranging from a trace to 5%, except in Chautauqua and Cowley counties where in 6 fields the amount ranged from 5 to 100%, averaging 50%. In 2 of the fields infection was 100%. In one field in Douglas County there was evidence of overwintering.

Speckled leaf blotch is present in all fields. The amounts range from 5 to 80% secondary infections. In the following counties Septoria is especially heavy: Chautauqua, Cowley, Kiowa, Ford, Hodgeman, and Pawnee. Individual fields with heavy rank growth as a general rule have a higher percentage of Septoria than the fields with thinner stands. It is difficult to estimate the amount of damage being caused by this parasite.

Loose smut was found in 22 out of the 29 counties, in 38 out of 59

fields. The amount ranges from a trace to 14%, averaging 2%. The bearded wheats generally had a trace, while the beardless varieties, especially Clarkan and Chiefkan, usually had considerably more.

Bunt (Tilletia sp.) was found in trace amounts in 2 fields in southeastern Kansas, in Allen and Montgomery Counties.

Scab was found in 5 fields in Montgomery, Chautauqua and Cowley counties.

A leaf spot which appears to be bacterial is evident in small amounts in some fields, especially in the central counties. Tenmarq wheat appears to be somewhat susceptible to this disease.

In Hodgeman and Pawnee counties a few fields were observed which were suffering from a condition which is probably dry land foot rot. It was found in early planted wheat.

Oats.--

Smut (covered and loose) was found in Franklin, Allen, Montgomery, Chautauqua, Cowley, Sumner, Harper, and Rice counties and was rather conspicuous, ranging from 2 to 12%, averaging 7% in 9 fields. Crown rust was found in trace amounts in all fields. Stem rust was just beginning in fields in Chautauqua, Sumner, Harper, Pawnee and Rice Counties. Leaf blotch (Helminthosporium sp.) was found in Franklin, Allen, and Rice Counties. Anthracnose (Colletotrichum graminicolum) was found heavily infecting the lower leaves of 2 fields in Montgomery and Chautauqua Counties. It was also found in Anderson, Cowley, Sumner, Harper and Pawnee Counties.

Barley.--

Covered smut and loose smut were found in 8 widely distributed counties. In general covered smut seems to be somewhat heavier than loose smut, the former ranging from 2 to 25%, averaging 14%, the latter ranging from 4 to 20%, averaging 8%. In many fields the combined losses from smut were as high as 30%.

Leaf rust was found in Saline, Cowley, and Anderson Counties. In the first 2 counties the amount was light, while in Anderson County infection was estimated to be 80%. Spot blotch (Helminthosporium) was found in trace amounts in most fields. Mildew (Erysiphe graminis) was noted in Anderson and Cowley Counties. Septoria leaf blotch (Septoria passerinii) was found in Kiowa County. Scab was found on a few heads in Pottawatomie County.

Rye.--

Leaf rust is causing extensive damage in fields in Jefferson, Montgomery, and Cowley Counties where every leaf has 100% infection. Septoria leaf blotch (Septoria secalis) is present but is obscured by the leaf rust. Stem rust was just beginning in one field in Jefferson County.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

SHORT REPORTS ON DISEASES OF CEREALS AND GRASSES

STEM RUST ON OATS AND WHEAT IN TEXAS: Stem rust was seen on oats and wheat in Kerr County. Infection was heavy, but apparently too late to affect yields seriously.--George E. Altstatt, Emergency Plant Disease Prevention Project. May 20 - 31.

DISEASES ON CORN IN LOUISIANA: Rust (Puccinia sorghi) is beginning to show up in fields around Baton Rouge and Bunkie. A small amount of brown spot (Physoderma zeae-maydis) was noted in some fields in St. John Parish. Mosaic (virus) was found in one field near the Terre Haute Plantation at Reserve, in traces only. Leaf stripe (Helminthosporium turcicum) was rather common on sweet corn below New Orleans.--Douglas C. Bain, Emergency Plant Disease Prevention Project. May 29 - June 3.

CORN DISEASES IN TEXAS: Corn rust and smut (Ustilago zeae) [U. maydis] were observed occasionally in Hidalgo County.--George E. Altstatt, Emergency Plant Disease Prevention Project. May 20 - 31.

RUST ON SWEET SORGHUM IN TEXAS: Sorghum (Honey) showed a trace of rust (Puccinia purpurea) in experimental blocks at Weslaco, Hidalgo County.--George E. Altstatt, Emergency Plant Disease Prevention Project. May 20 - 31.

RUST ON "LITTLE BARLEY" IN TEXAS: A rust on wild "Little Barley", Hordeum pusillum, common in the North Texas area, has been identified by Dr. D. A. Preston as Uromyces hordeinus.-- George E. Altstatt, Emergency Plant Disease Prevention Project. May 20 - 31.

REPORTS ON DISEASES OF FORAGE CROPS

ALFALFA DISEASES IN TEXAS: Alfalfa collected at Vernon (Wilbarger County) during the last week in April was found to have downy mildew (Peronospora trifoliorum) and bacterial leaf spot (Pseudomonas medicaginis), both organisms being identified by Dr. D. A. Preston. Affected plants were in the low area of the field.--George E. Altstatt, Emergency Plant Disease Prevention Project.

LEAF SPOT ON ALFALFA IN SOUTH DAKOTA AND MINNESOTA: During the week ending June 4 a survey was made in central and eastern South Dakota, in western and south-central Minnesota. Leaf spot (Pseudopeziza medicaginis) was found in all alfalfa fields but was causing appreciable injury in only one case, this field being north of Brookings, South Dakota.-- Ian W. Tervet, Emergency Plant Disease Prevention Project.

DISEASES REPORTED ON SWEETCLOVER: George E. Altstatt reports that slight damage was observed on Melilotus indica due to Colletotrichum trifolii in an experimental block at Yoakum, Texas (May 20 - 31).

Stagonospora meliloti leaf spot was found commonly on sweetclover in eastern South Dakota and western Minnesota, according to Ian W. Tervet (week ending June 4).

DISEASES ON SOYBEAN IN LOUISIANA: Soybeans (often with corn) are planted extensively throughout the State south of Alexandria. Thus far the plants have been rather free from disease. Traces of mosaic (virus) were found in many fields in this entire area. Downy mildew (Peronospora manshurica) was found in one field near Moreauville in Avoyelles Parish, apparently affecting only the lower leaves of the plants. Leaf spot (Cercospora daizu) [C. sojina] was found occasionally in traces.

Two different leaf diseases were noted in one large field near Bunkie. One was characterized by a very faint Yellow blotching and water-soaked appearance confined to the veins on the lower surface of the leaf. Affected leaves apparently are shed at this early stage of the disease. Later, after the leaves are shed, the water-soaking becomes more pronounced and affected areas turn brown. Aphids were found on some of the leaves. Large brown spots, 3mm or more in diameter, surrounded by a rather wide yellow halo, were typical of the other disease, which was more common and more severe.

Bacteria were found to be associated with both diseases.--Douglas G. Bain, Emergency Plant Disease Prevention Project. May 29 - June 3.

REPORTS ON DISEASES OF FRUIT CROPS

APPLE SCAB IN NEW ENGLAND: Apple scab (Venturia inaequalis) has been noticeable on the leaves of unsprayed apple trees in Connecticut and Massachusetts since about the middle of May. Primary infections, however, have been relatively few and the weather has not been conducive to the spread of scab. In Connecticut Mr. E. M. Stoddard reports that asci and ascospores have not functioned normally this year, even during the occasional brief periods conducive to spore discharges. Apparently the perithecia did not mature properly and as a result the asci have not elongated and discharged the spores normally.--Robert C. Cassell, Emergency Plant Disease Prevention Project. June 5 - 7.

PEACH DISEASES IN THE FORT VALLEY SECTION OF GEORGIA: Dr. John Weinberger of the Fort Valley Peach Laboratory accompanied the writer on a survey of peaches in that section. The crop is about normal, and one of excellent quality is anticipated. Disease problems, at the present time, are potential ones.

Dr. Wineburger stated that blossom blight due to Sclerotinia [Monilinia] fructicola was more severe than it had been in the last 7 or 8 years. Many of the mummied blossoms persist and deep lesions have formed on the branches at the point of attachment. Also, quite a few wormy peaches with brown rot are found scattered through the orchards, so that a serious potential danger exists. If the weather continues dry, losses will be low; but if it should begin raining at the time peaches start to ripen (about June 15), the disease may be hard to control. Follow-up observations will be necessary to determine damage to the branches.

Bacterial spot or bacteriosis (Bacterium [Xanthomonas] pruni) is more severe on the leaves of susceptible varieties, principally Elberta, than usual. Infection is general in most Elberta orchards; an occasional tree is found on which infection is severe and leaf shedding heavy. A few orchards were found in which the fruit was spotted. Here again, the danger is more potential than actual, depending on weather conditions to follow.

Scab (Cladosporium carpophilum) is prevalent in many orchards but damage is light.

Phony peach (virus) was observed in several orchards, scattered "phony" trees being found. Rosette (virus) was observed on one tree in an orchard on the Atlanta road, near Fort Valley.--G. M. Stone, Emergency Plant Disease Prevention Project. June 3.

BROWN ROT ON STONE FRUITS IN MICHIGAN: A survey was made from June 3 to 9 in the main stone-fruit growing sections of the State, including portions of Berrien, Van Buren, Allegan, Oceana, and Lenawee Counties. On sour cherries brown rot caused considerable blossom blight but far more damage was done by unfavorable weather conditions at the time of flowering which prevented proper pollination. Sweet cherries were damaged by brown rot both at the time of flowering and later in the green fruit stage. Many unsprayed trees were seen on which the bulk of the green fruit had been destroyed by brown rot. Peaches varied considerably in the amount of brown rot present depending on the location. In parts of Berrien County where there has been no peach crop for several years the trees show little blossom or twig blight. This year there is a fine set of fruit. In other orchards which have fruited regularly and in which the spraying program was either ineffective or omitted the trees are heavily infected with brown rot. As a general rule growers who sprayed according to the schedule outlined for the State were able to control the disease effectively.--M. R. Harris, Emergency Plant Disease Prevention Project.

DISEASES OBSERVED ON FRUIT AND NUT CROPS IN LOUISIANA: Pear leaf spot (Fabraea maculata) with extensive defoliation was noted in the area below New Orleans.

Scab (Cladosporium effusum) was observed on leaves of susceptible pecan varieties at Baton Rouge.

Leaf blight (Corticium sp.) was found in a few fig trees around a house in Plaquemines Parish.--Douglas C. Bain, Emergency Plant Disease Prevention Project. May 29 - June 3.

VARIOUS REPORTS ON INJURY DUE TO WEATHER CONDITIONS

WINTER INJURY TO TREES IN MASSACHUSETTS: During recent weeks the foliage of many narrow- and broad-leaved evergreens has turned brown on certain branches or on the entire plant. Pines, spruces, hemlocks, arborvitae, rhododendrons, and laurels present typical examples. The growth of the previous summer is affected most commonly, and individual plants may show severe injury on portions particularly exposed to winter winds. In most cases the cause of the trouble may be described by the convenient but indefinite term "winter injury."

Plant injury associated with winter conditions occurs every year to a varying extent, depending upon a variety of factors, and the severity of the cold alone is not a reliable index of damage to plants. During the past winter the absence of a lasting snow cover resulted in the freezing of the ground to a sufficient depth in some cases to kill roots. Plants affected to this extent will not recover. Less permanent injury may result from drying winds, unusually bright sunlight, or a combination of these factors in relation to growth or growing conditions of the previous fall or summer. Damage from fungus diseases and insect pests may also be a contributing factor and serve in predisposing a woody plant to a weakened condition favorable for injury during the winter months. The most direct and obvious effects of winter conditions on trees, however, are frost cracks and breakage and injuries produced by snow and ice, but such damage was not so widespread in Massachusetts during the past winter

as in the previous one.

In addition to evergreens, many other perennials are showing signs of injury now (May). Additional effects on such deciduous plants as maples, elms, privets, and the like may appear later in the season if root systems have been seriously damaged. In the winter of 1942-43 death of buds and dying back of branches resulted from extremely low temperatures. The past winter, however, did not cause so much of this type of injury, and the foliage resulting from the expanding of buds is relatively satisfactory; but the development of most of this growth to date has not drawn heavily upon the root system. Therefore, the time is not right to predict whether serious injury to deciduous trees and shrubs has occurred commonly.

Late frosts on May 18 and 19 were sufficiently severe to injure tender foliage on shade trees in Massachusetts, especially in exposed locations.--M. A. McKenzie, Massachusetts State College.

INJURY BY WINTER KILLING AND LATE FROST INJURY IN NEW ENGLAND: As the early season advances evidences of severe winter injury to shrubs, trees and cultivated plants in Massachusetts, Connecticut, and Rhode Island becomes more evident. Reports of severe killing of raspberries and blackberries are common.

Evergreen shrubs in certain areas have been partially or entirely killed. It is thought that the lack of snow coverage coupled with cold and possible partial drought in February was responsible for desiccation of the plants at critical periods. (Observations have not been made in Northern New England).

Heavy frosts and freezing by areas May 18 and 19 have caused heavy losses to apples, peaches, grapes, strawberries, blueberries, tomatoes, cabbage, lettuce, onions, potatoes, beans, asparagus and other crops. New England farmers have suffered crop losses totalling a million dollars this week. In Massachusetts unofficial temperature readings of the night of May 18 range by areas from 16° to 26° F and an estimated crop loss of $600,000 was set for Massachusetts alone by the state commissioner of agriculture. Dr. O. C. Boyd reports that there will be a 50% to 60% loss of the strawberry crop and heavy loss to the cultivated blueberries on Cape Cod. Beans and tomatoes suffered the worst among the vegetables and many farmers will be forced to replace these crops. Eighty-five percent of the apple crop in areas of Northern New England was damaged. -- Robert C. Cassell, Emergency Plant Disease Prevention Project. May 14 - 20.

WINTER KILLING OF EVERGREENS IN MINNESOTA: Severe winter-killing of most evergreens occurred throughout central Minnesota, the injury being especially severe in young nursery stock although well-established trees were frequently injured.---- Ian W. Tervet, Emergency Plant Disease Prevention Project. Week ending May 21.

EFFECTS OF DROUGHT ON NATIVE VEGETATION ON THE EAST COAST OF FLORIDA: The effects of the prolonged drought that prevailed for several weeks were apparent all the way down the East Coast from Cocoa to Key Largo on a trip from April 15 to May 5, the native trees and shrubs being more or less adversely affected at many points where examinations were made. At Tropic on the southern end of Merritt Island, where the sandy soil is closely underlaid by coquina limestone, it was so dry that numerous small marlberry (Ardisia pickeringia) plants were found to be severely wilted and in some

cases even gumbo-limbo (Bursera simaruba) trees were rather yellow and wilting somewhat.

In an area of subtropical hammock north of Sebastian, marlberry, lancewood (Ocotea catesbyana), lime prickyash (Zanthoxylum fagara) and chawstick (Gouania lupuloides) were among the native plants most frequently showing wilting.

At Miami and other points in Dade County many of the subtropical trees were looking at their poorest for the year as this is the season when many species normally shed their foliage and put out a new growth. This process of leaf shedding was greatly accentuated by the extremely droughty conditions of the past few weeks. In Brickell Hammock at Miami shriveled leaves were falling with every wind that blew and marlberry, snowberry (Chiococca alba), whitestopper Eugenia (Eugenia anthera), and Lantana involucrata were among the small plants that most frequently exhibited wilting. Gumbo-limbo trees were severely defoliated and yellowed. South of Coconut Grove the marlberry and whitestopper Eugenia growing in the hammock margins along the roadside commonly showed pronounced wilting. On Key Largo a number of native plants, particularly the chawstick vine, showed decided wilting.

Plants in some of the larger ornamental nurseries in the vicinity of Miami were suffering severely from drought and the labor shortage prevented watering all their plants in some cases.

Farther north in the State the general dryness of the woods and grass had been conducive to fires that had recently swept over extensive areas in many places, as is practically always the case in Florida at this season of the year. Fires constitute great destroyers of many plant diseases, particularly rusts. For example, a fire that sweeps over extensive areas of flatwoods in certain localities along the middle East Coast may burn off acres of the little running oak (Quercus pumila) that commonly serves as an alternate host for the cone rust (Cronartium strobilinum) on slash pine (Pinus caribaea). -- Arthur S. Rhoads, Emergency Plant Disease Prevention Project.

BRIEF NOTES ON PLANT DISEASES

THREAD BLIGHT (CORTICIUM STEVENSII) ON PEPPER VINE (AMPELOPSIS ARBOREA): Recently (June 6) the common pepper vine (Ampelopsis arborea) was found growing on a large fig tree that was known to have been infected with thread blight (Corticium stevensii) [Pellicularia koleroga] for a number of years. The fungus had begun seasonal development on the fig tree, new hyphal threads having invaded the new leaves, a number of which had been killed. Basidial mats had developed on other fig leaves. Hyphal threads grew directly from the infected fig branches on to the leaves and stems of the pepper vine. Typical basidial mats with numerous basidia were found on the lower surfaces of several infected leaves. The infected leaves of the pepper vine were normal green in color and showed no ill effect from the thread blight fungus.

Two other Corticiums were also found attacking the same fig tree mentioned above. The common fig leaf blighting fungus, Corticium microsclerotia, was just beginning to develop. Some leaves had been killed and the typical small, brown sclerotia were observed on the twigs, leaf petioles, and dead

leaves. Several small branches on this tree had been killed this spring by the limb blight fungus, Corticium salmonicolor. -- E. C. Tims, Louisiana Agricultural Experiment Station, Baton Rouge.

RUST ON GREEN ASH IN SOUTH DAKOTA: Heavy rust (Puccinia peridermiospora) infections were developing on green ash in eastern South Dakota. On May 24, many unopened aecia were seen. -- Ian W. Tervet, Emergency Plant Disease Prevention Project.

RUST ON WILD DANDELION IN TEXAS: A rust observed on wild dandelion growing along fences in Parker County has been identified by Dr. D. A. Preston as Puccinia hieracii. -- George E. Altstatt, Emergency Plant Disease Prevention Project. May 20 - 31.